

disk memory comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

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cont.
SUB 3

15. (Four Times Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

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SUB 4

22. (Four Times Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or

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less;

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wherein said hard-carbon coating selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

SUB
G5

29. (Four Times Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

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irradiating a laser light having a wavelength of 700 to 800 nm onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

SUB
G6

36. (Four Times Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

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irradiating a laser light having a wave length of 700 to 800 nm onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

SUB
G7

43. (Four Times Amended) A method for operating an optically recordable disk memory comprising the steps of:

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introducing a substrate made of an organic resin or an industrial plastic

material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

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CHS
50. (Four Times Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said substrate through said hard-carbon coating;

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wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

SUB
CHS
57. (Thrice Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said optical disk through said hard-carbon coating;

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wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

58. (Thrice Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

59. (Thrice Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

60. (Thrice Amended) A method for operating an optically recordable disk memory comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said substrate through said hard-carbon

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coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or

less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

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SUB
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68. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a semiconductor laser light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

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69. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a semiconductor laser light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

70. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

71. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

79. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having a wave length of 700 to 800 nm onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less and wherein said hard-carbon coating contains hydrogen.

80. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

81. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

82. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a

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hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

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90. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

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91. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration

at 20 atomic% or less.

92. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

93. (Twice Amended) A method of operating an optical magnetic disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

101. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

102. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a semiconductor laser light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, and wherein said hard-carbon coating is an outermost layer of the disk and wherein said element has a concentration at 20 atomic% or less.

103. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a semiconductor laser light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

104. (Twice Amended) A method of operating a compact disk comprising the

f13
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steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

112. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

113. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

114. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

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cont. 115. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

f15 sub G15 123. (Thrice Amended) A method of operating a compact disk comprising the

steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

124. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing an optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

125. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein

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said hard-carbon coating contains hydrogen.

126. (Twice Amended) A method of operating a compact disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

134. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing said optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, and wherein said hard-carbon coating contains hydrogen.

135. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing said optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a semiconductor laser light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

136. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a semiconductor laser light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

137. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a semiconductor laser light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

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Sub 17
145. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing said optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

146. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing said optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

f17
irradiating a laser light having an wave length of 700 to 800 nm onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

147. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a laser light having an wave length of 700 to 800 nm onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

148. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a laser light having an wave length of 700 to 800 nm into said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less;

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

156. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing said optical disk having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500\AA or less;

irradiating a visible light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is $30/\text{mm}^2$ or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

157. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing said optical disk having a surface protected by a protective film

comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said optical disk through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less,

wherein said hard-carbon coating contains at least one of element selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

158. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said hard-carbon coating contains hydrogen.

159. (Twice Amended) A method of operating an optical disk comprising the steps of:

introducing a substrate made of an organic resin or an industrial plastic material, said substrate having a surface protected by a protective film comprising a hard-carbon coating having a thickness of 500Å or less;

irradiating a visible light onto said substrate through said hard-carbon coating;

wherein the number of pin-holes in said hard-carbon coating is 30/mm² or less;

wherein said hard-carbon coating contains at least one of element

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selected from the group consisting of Si, B, N, P and F, wherein said hard-carbon coating is an outermost layer of the disk, and wherein said element has a concentration at 20 atomic% or less.

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